## **ABSTRACT**

The present invention relates to a method for the preparation of a miniaturized optical chemical or biochemical sensor device (e.g. bulk optode, etc. for ion sensing), said device comprising a substrate material having a planar surface portion, said planar surface

5 representing a transducer based on an optical phenomenon such as surface plasmon resonance based on evanescent waves, reflection or transmission; said planar surface portion having arranged thereon an multi-analyte array of (bio)chemical sensor dots located at spatially separated predetermined positions of the planar surface, said sensor dots including (i) a polymer matrix, and (ii) one or more (bio)chemical recognition

10 moieties, the method comprising (a) providing a substrate material having a planar surface portion; (b) providing one or more spotting fluid(s); (c) depositing the one or more spotting fluid(s) onto the planar surface portion of the substrate material by means of a pin-printer deposition mechanism (arrayer) and allowing the spotting fluid(s) to consolidate.